

COASTAL FACTORS & COASTAL + INLAND FLOODING MANAGEMENT

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- **COASTAL vs INLAND FLOODINGS /CITIES**
- **WHICH SHOULD BE MEANT BY “COASTAL ZONE” ?**



FLOOD TYPES

While flowing in the form of run-off, continental waters come through several states that causes a variety of flood types:

- PLUVIAL FLOOD
 - flash flood
 - strict pluvial flood
- FLUVIAL FLOOD:
 - levels
 - levels + stream drag
- GROUND FLOOD
- COASTAL FLOOD: ...



COASTAL vs INLAND FLOODS

At the end of its way through continents, waters are finally drained to oceanic basins according to an hydraulic process highly sensitive to the sea-level at the river mouth.

A relatively small and ephemeral sea level rise at the mouth, (storm surge, water set-up or meteorologic high waters and so on) can causes upstream important hydraulic backwards curves that may causes this fourth flood type

CONCOMITANCE:

Indeed, concomitance among different flood types is often responsible for enhancing the flood power of each flood type regarded separately.

In practice, two or more flood types are likely to merge. This happens under monsoons, or it was the case of the 1982 Saint Irene flood (Valencia, Spain), when Tous dam failed .



WHAT SHOULD BE MEANT BY “COASTAL ZONE” ?

“Coastal zone” is a vague term that can adopt several meanings:

- in geomorphologics: the “coastal zone” as the extension of the beach
- in urban planning: the “coastal zone” as an area of special urban protection
- in geologics: in this case the “coastal zone” encloses huge areas
- so ... Which are we understanding as “coastal zone” ?



LET US SEE....

SEVERAL CASES of STUDY:

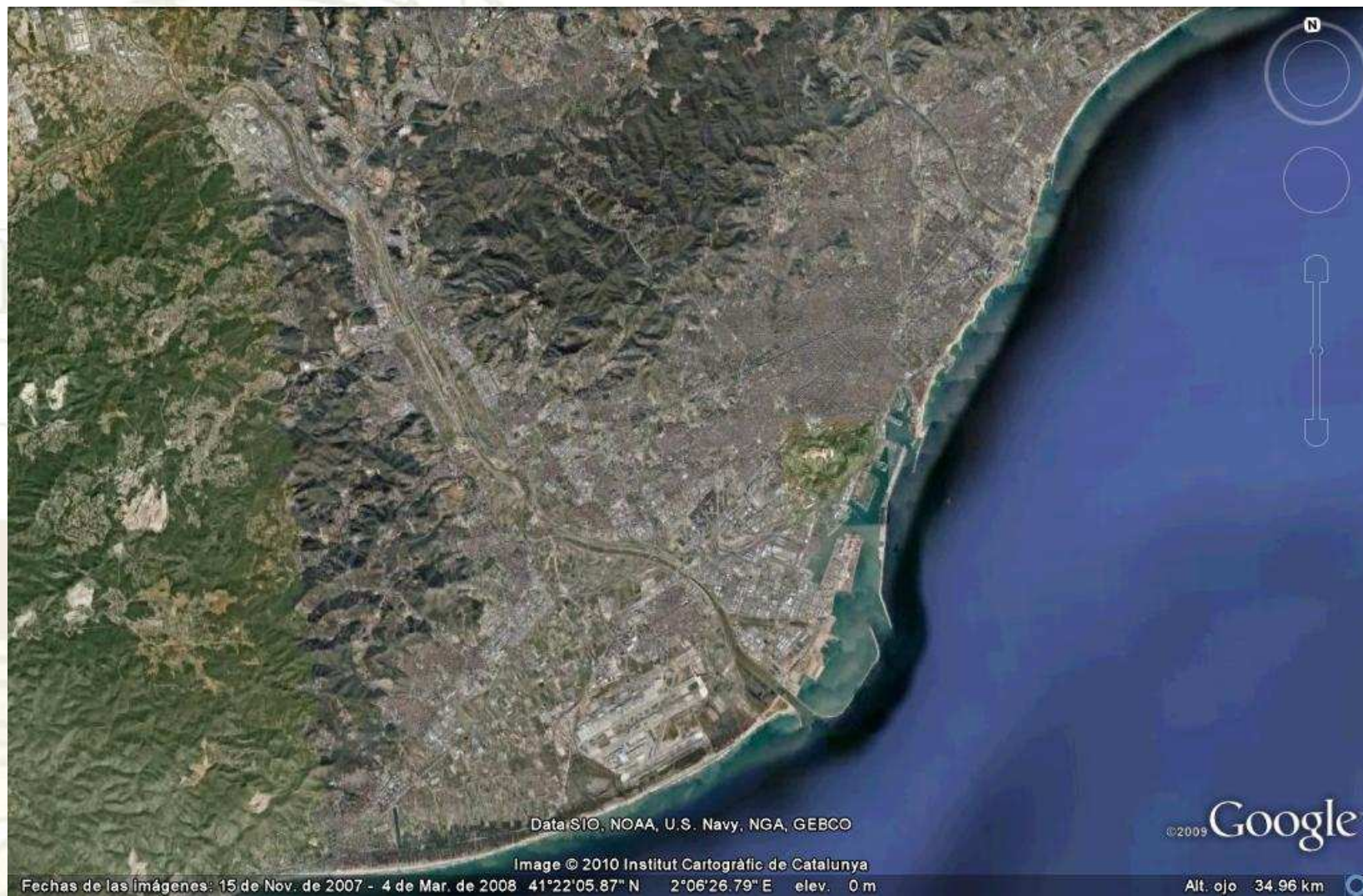
Barcelona/(Sevilla)/Valencia (Venice) - SE England/Netherlands - Rhin Basin –
Mersey/Elbe/Donaut -Mississippi - Plata - Ganges



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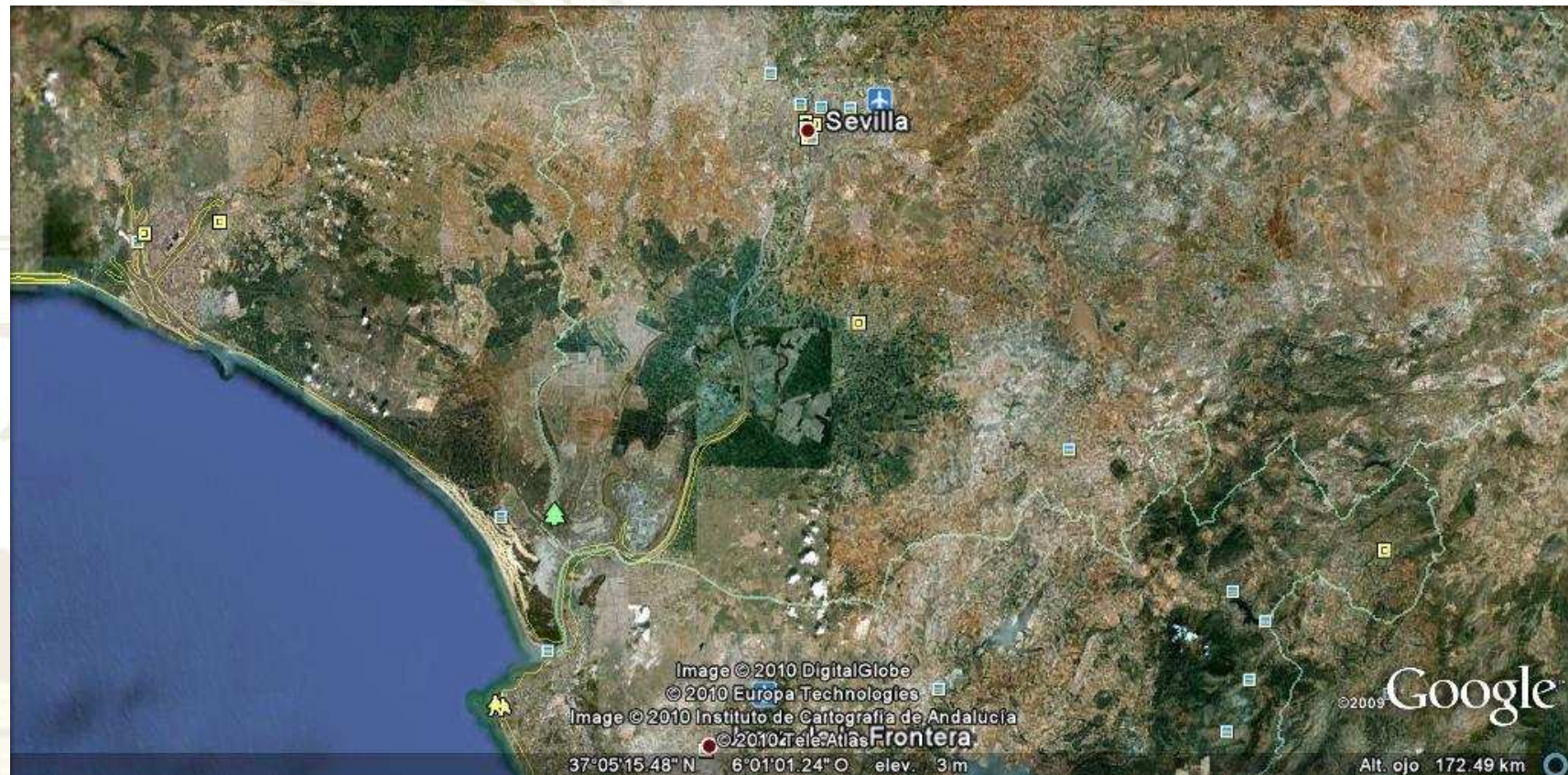
BARCELONA (shore line city)



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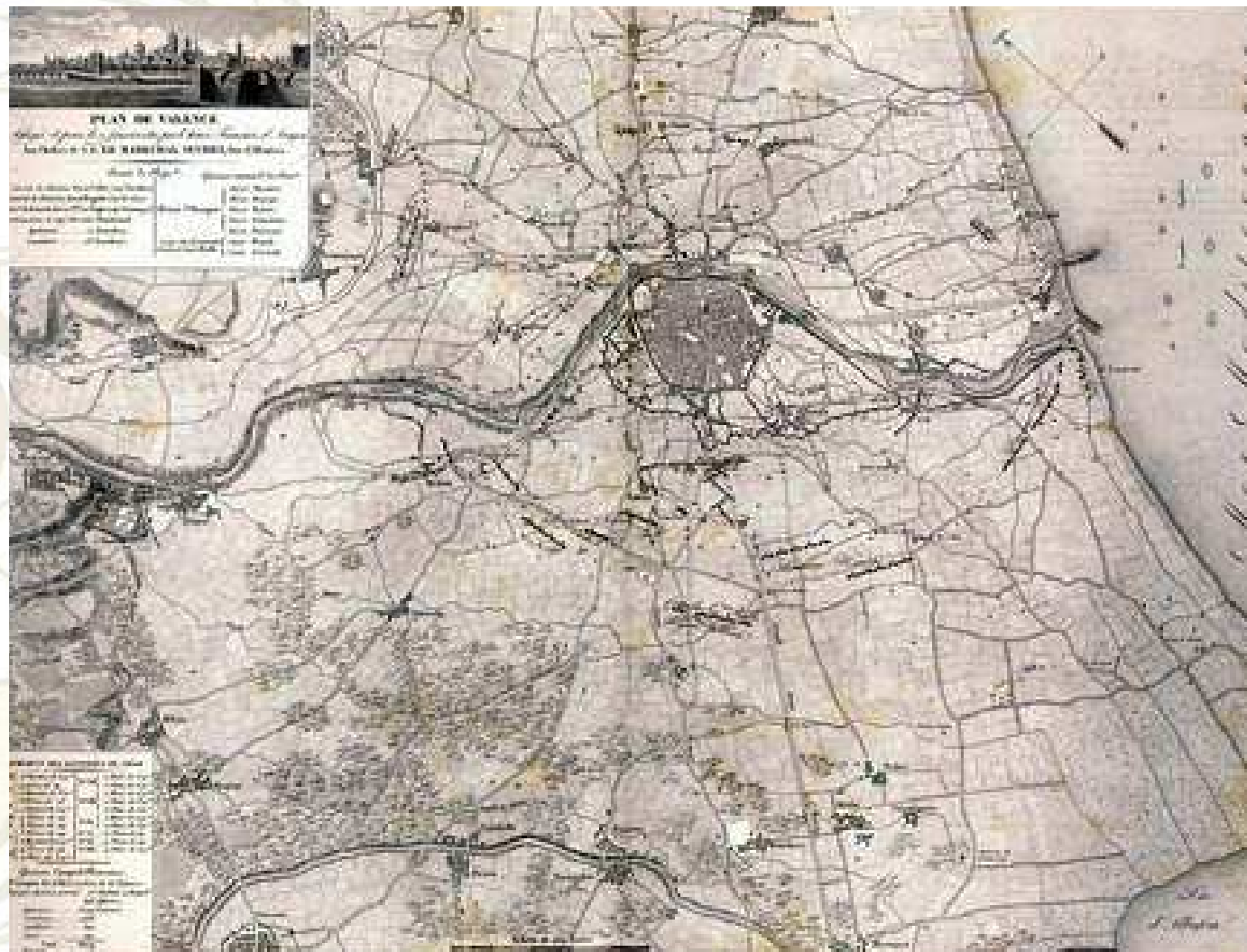
SEVILLA (Coastal Zona city)



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VALENCIA (Coastal city)



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VALENCIA AREA: COASTAL, PLUVIAL AND FLUVIAL FLOODS

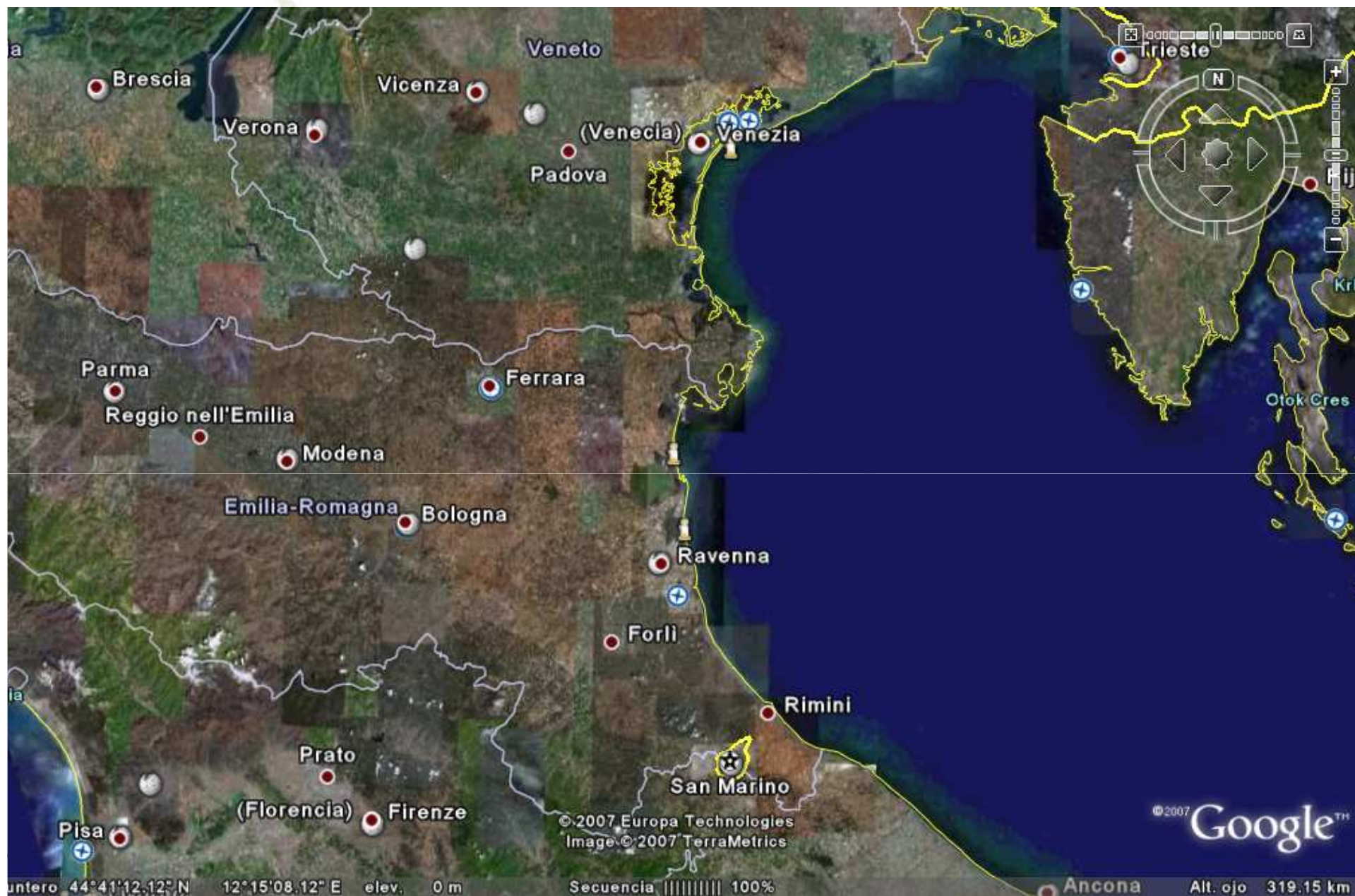


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TURIA FLOOD AT VALENCIA



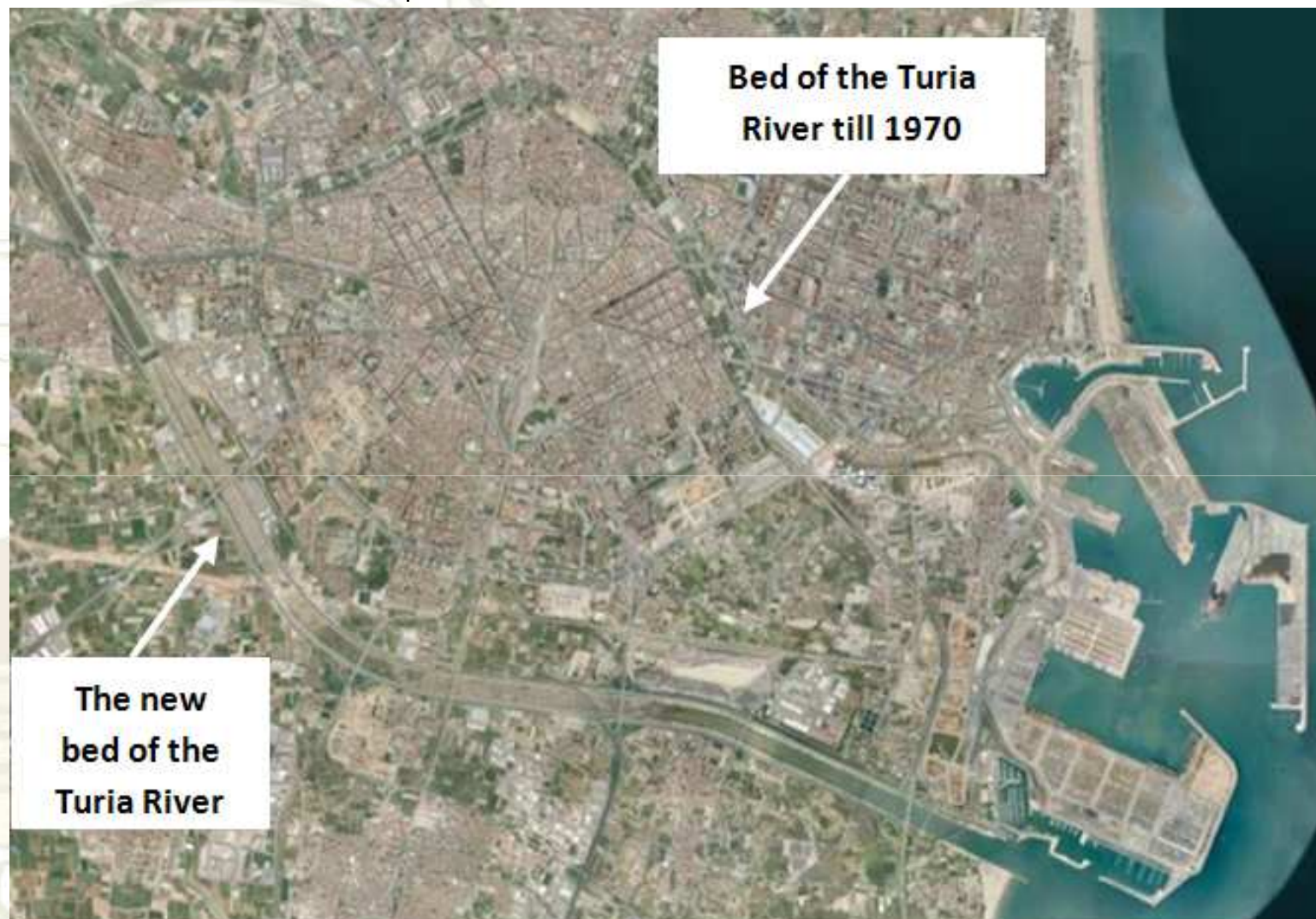
Valencia flood, 1957



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TURIA FLOOD AT VALENCIA



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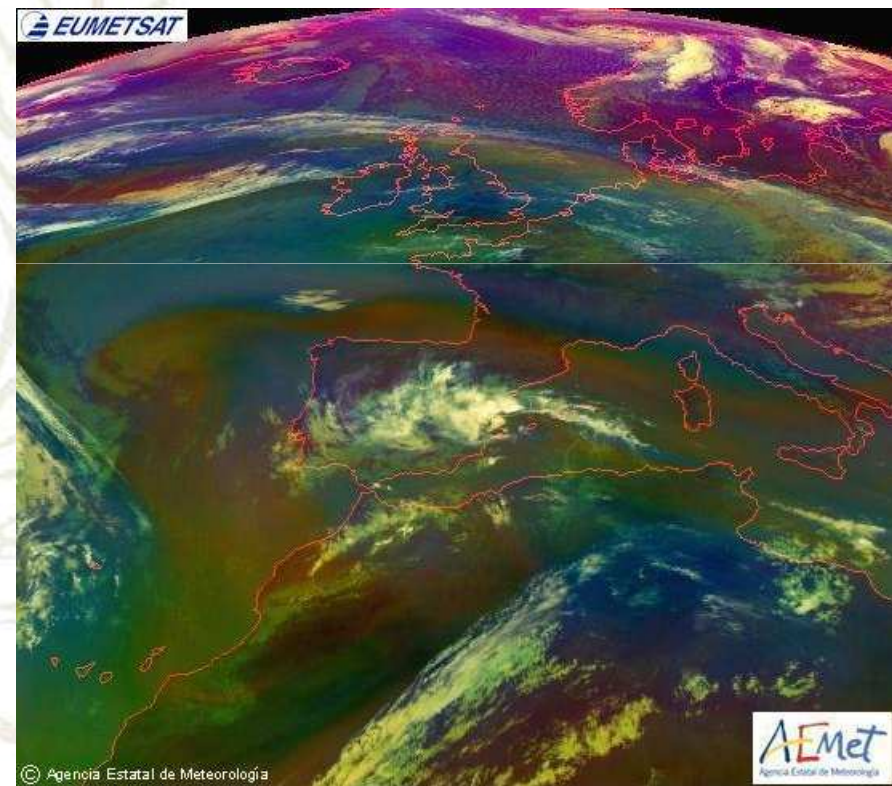
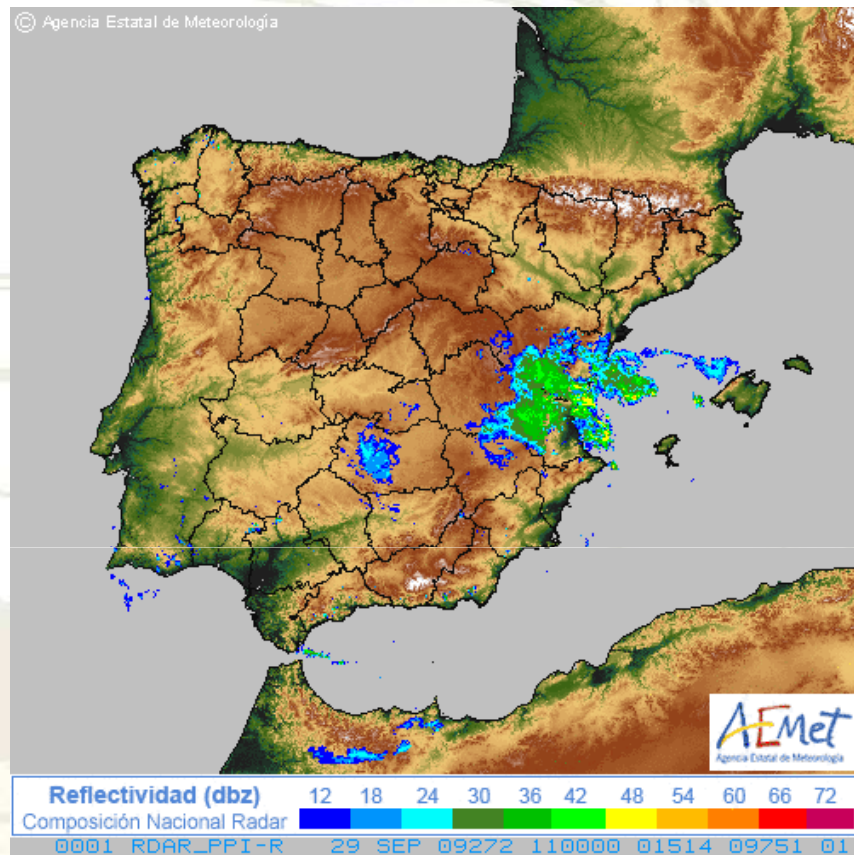
VALENCIA AREA: COASTAL, PLUVIAL AND FLUVIAL FLOODS



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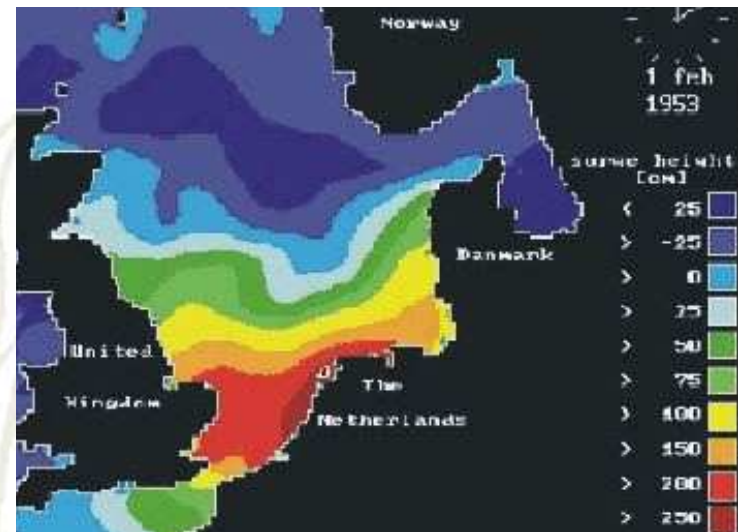
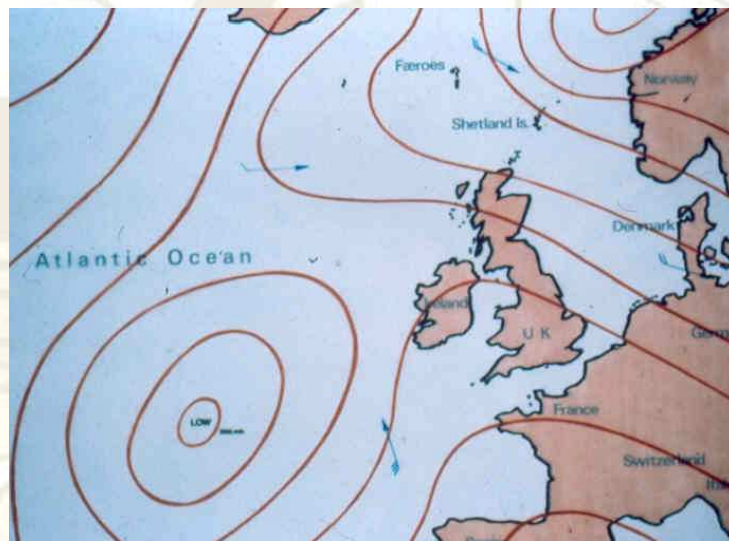
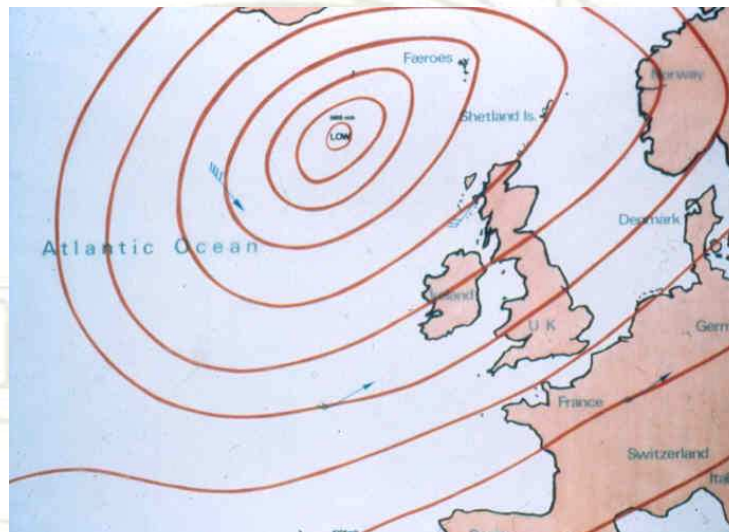
VALENCIA AREA: COASTAL, PLUVIAL AND FLUVIAL FLOODS



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THAMES (LONDON: Coastal zone cities)



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RHIN BASIN (ROTTERDAM : coastal cities)

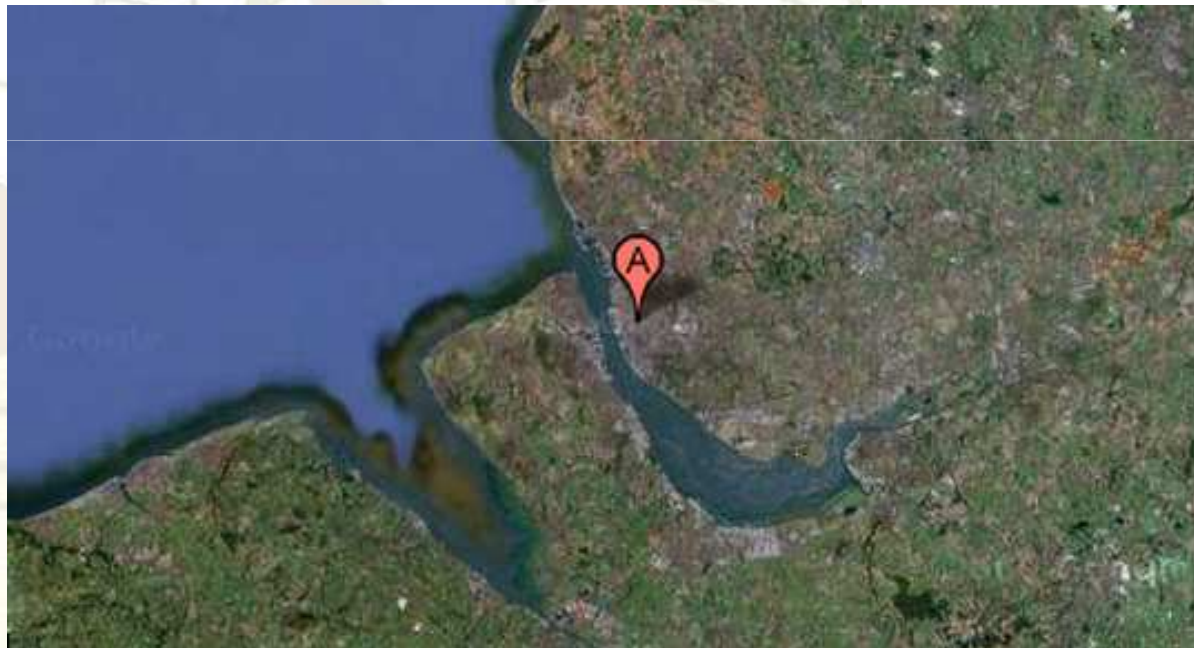
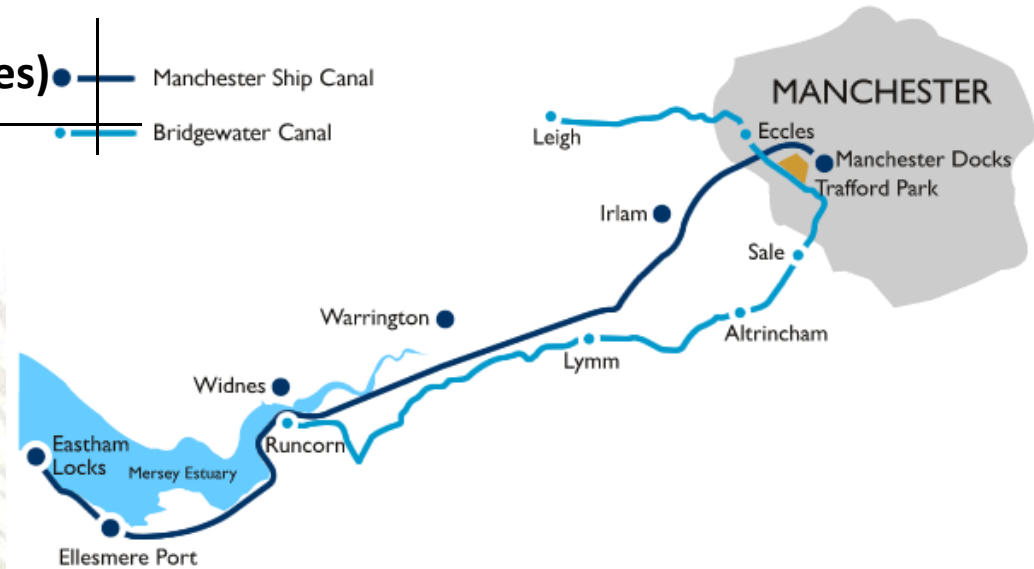


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POLITÉCNICA

MERSEY (MANCHESTER: coastal zone cities)



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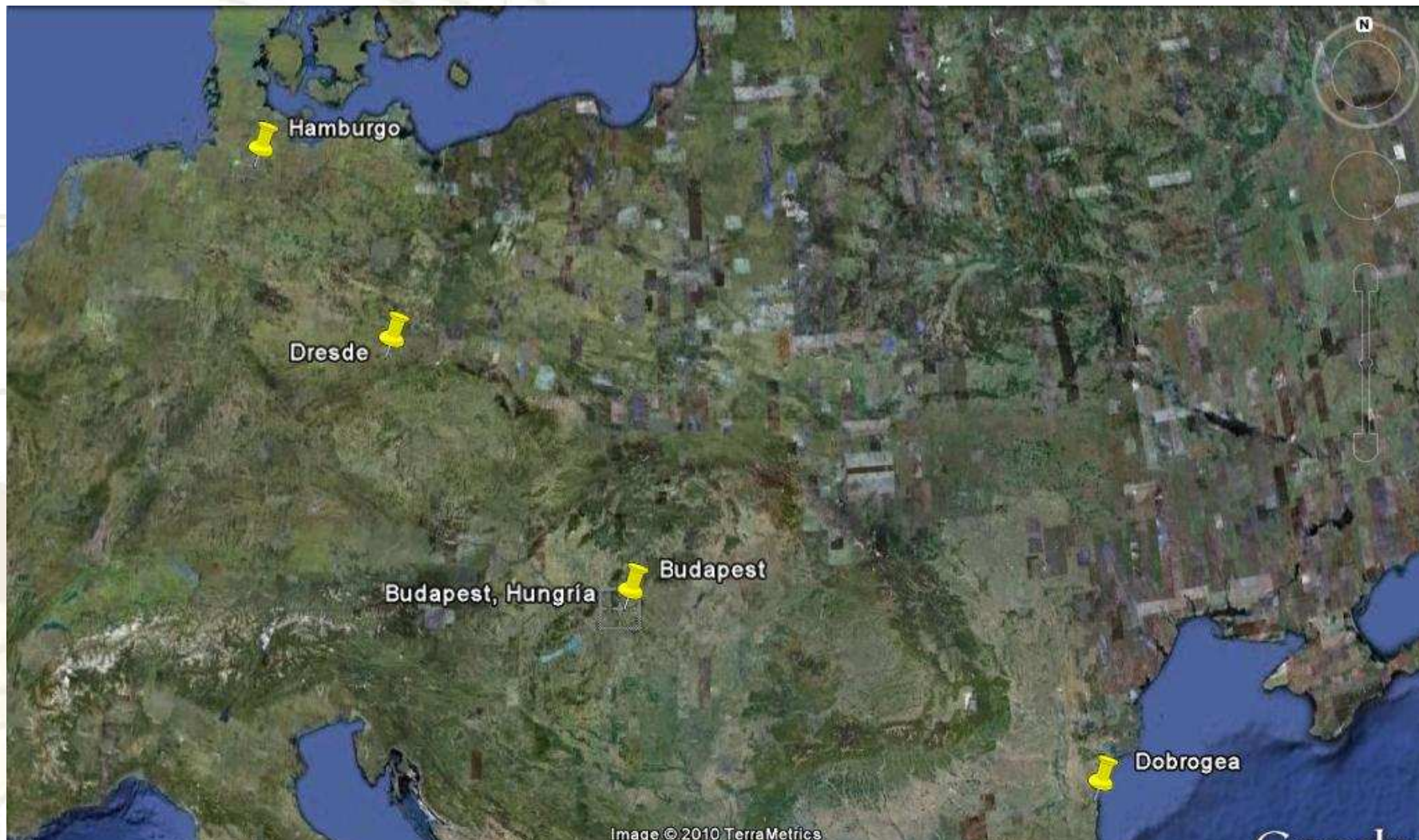
ELBE (HAMBOURGH: Coastal zone cities)



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ELBE & DANUBE (Coastal zone cities)



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MISSISSIPPI BASIN vs FLORIDA



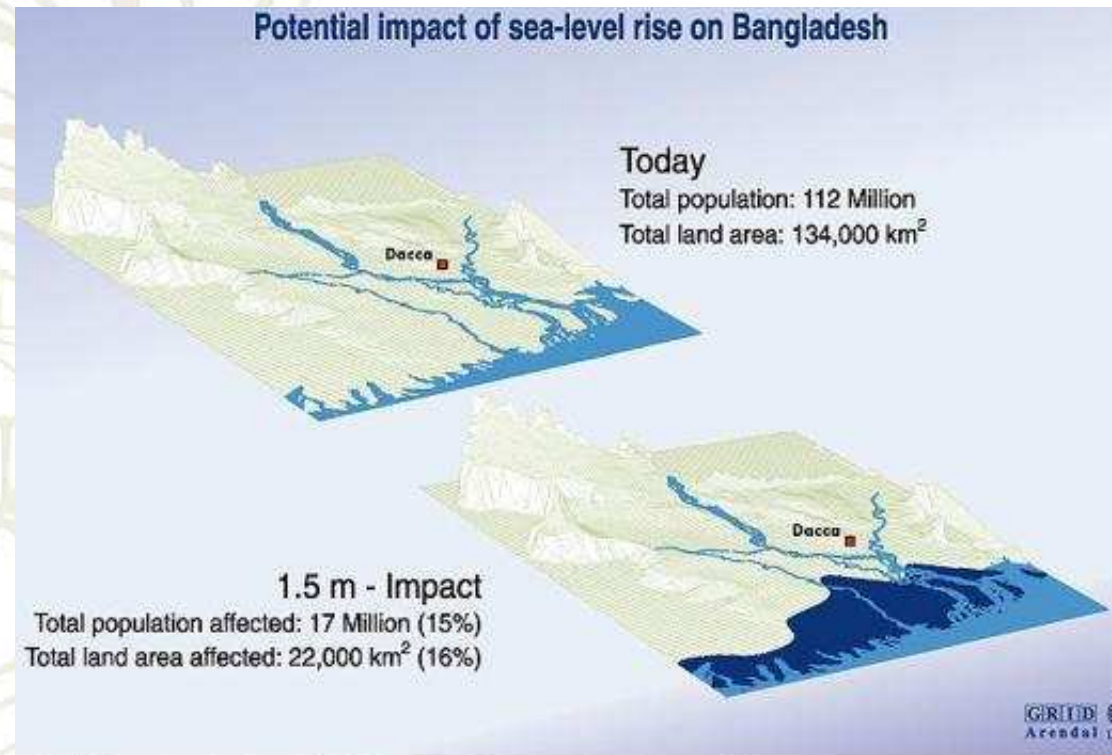
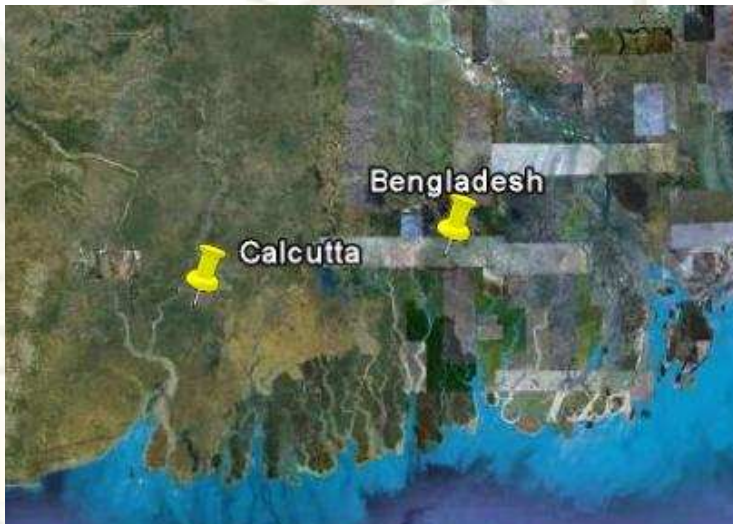
PLATA RIVER DELTA



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BANGLADESH FLOOD RISK



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THANKS

TILL NEXT TIME



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- in geologics: in this case the “coastal zone” encloses huge areas
 - from the Mississippi mouth to the Great Lakes, in USA
 - from the Atlantic coast to the Oural mountain, in Europe
 - from the coast line to the Meseta foot, in Spain
- so ... What are we supposed to understand by “coastal zone” ?





COASTAL FACTORS & COASTAL + INLAND FLOODING MANAGEMENT

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